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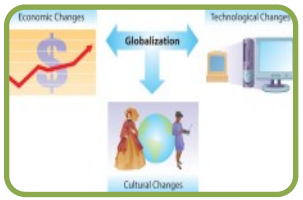
Chapter 1: Managing in the Digital World

Managers are facing unique challenges as digital technologies permeate the workplace

Chapter 1 Learning Objectives

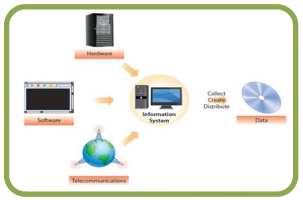
Information Systems Today

- Describe the characteristics of the digital world and the advent of the Information Age.



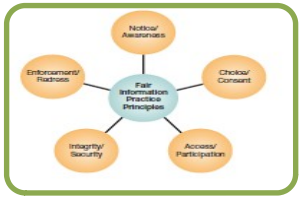
Evolution of Globalization

- Define globalization, describe how it evolved over time, and describe the key drivers of globalization.



Information Systems Defined

- Explain what an information system is, contrasting its data, technology, people, and organizational components.



IS Ethics

- Describe how computer ethics impact the use of information systems and discuss the ethical concerns associated with information privacy and intellectual property.

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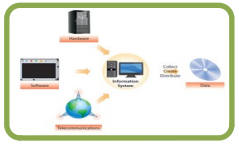

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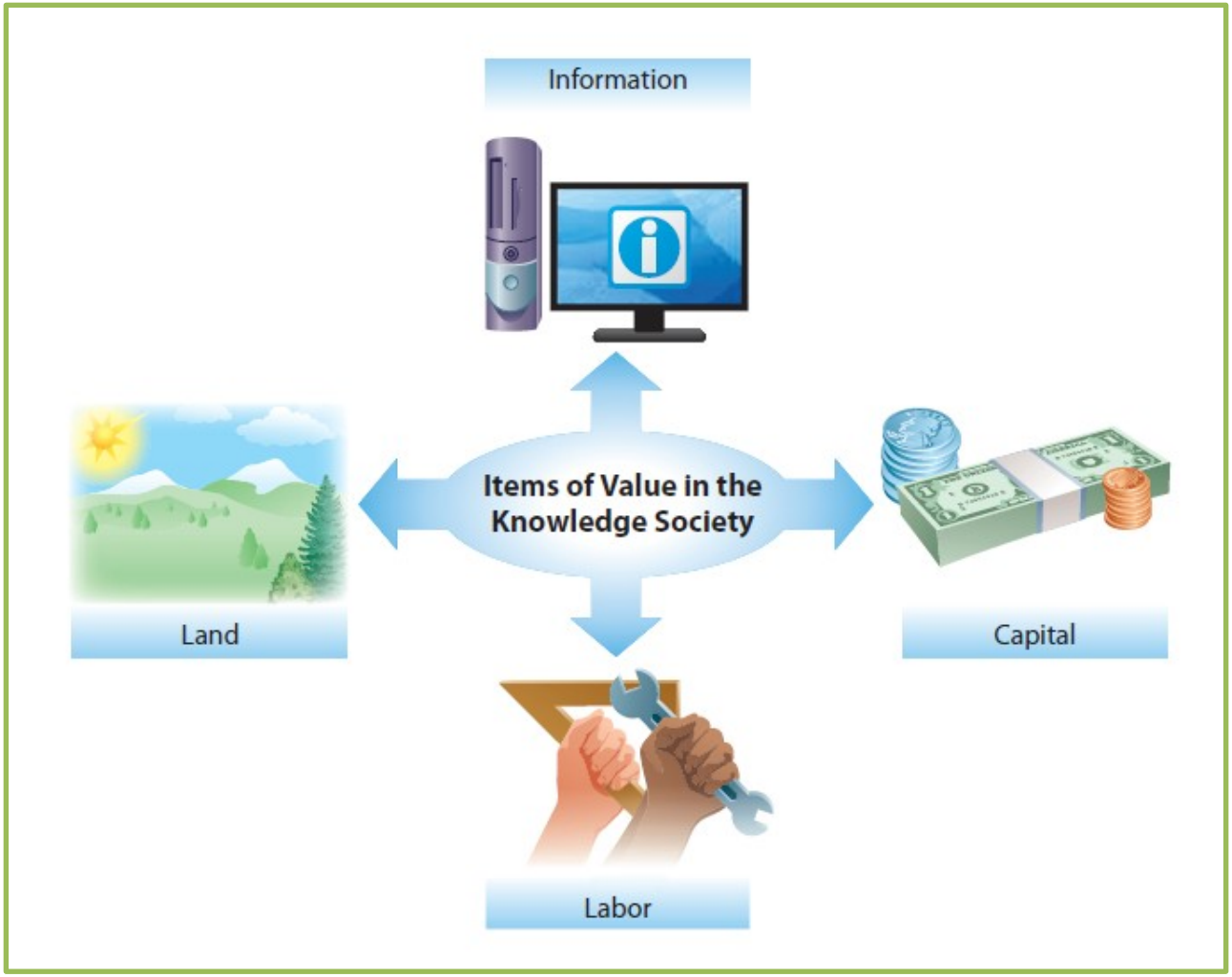
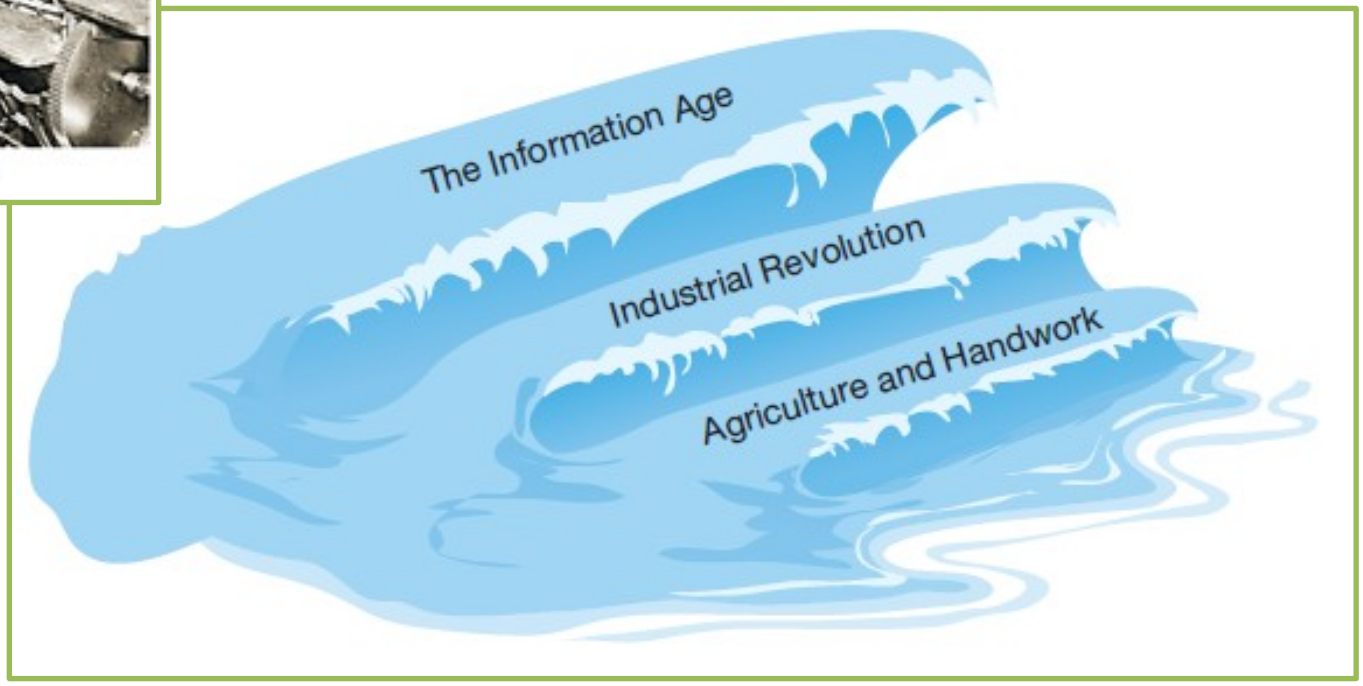
Information Is a Valuable Resource

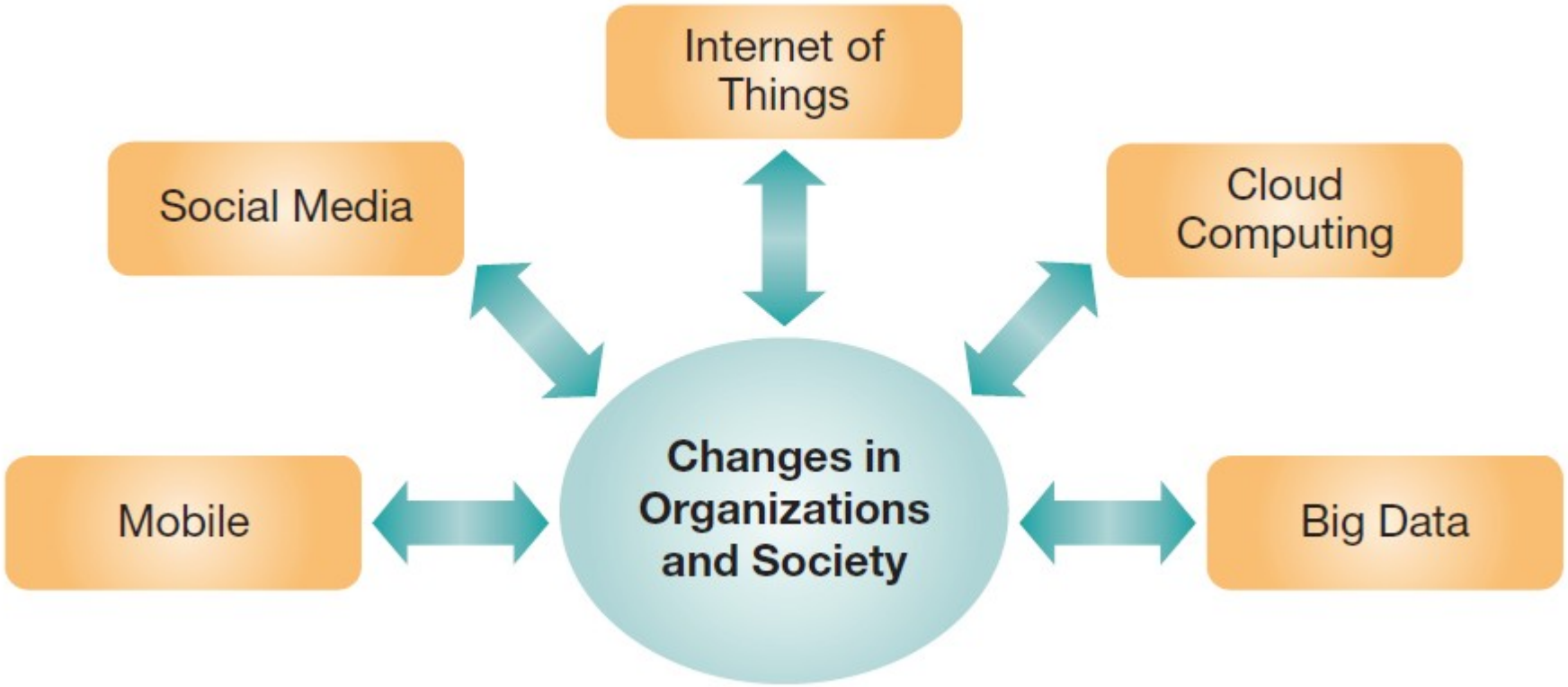


The Rise of the Information Age

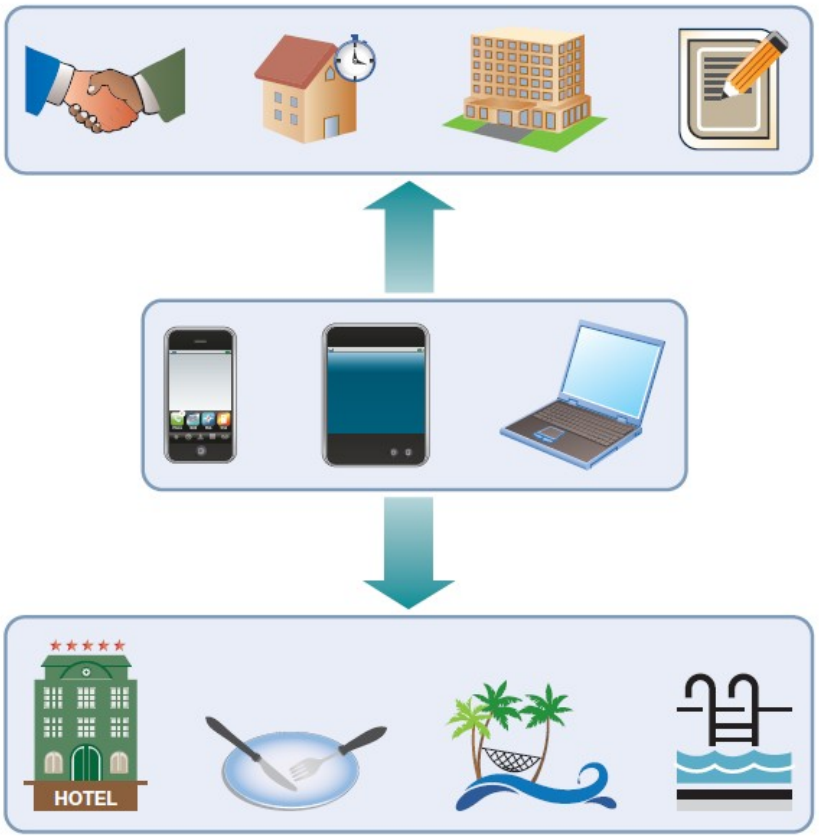
Source: ChipPix/Shutterstock.



Five IT Megatrends in the Information Age



Five IT Megatrends in the Information Age: Mobile Computing



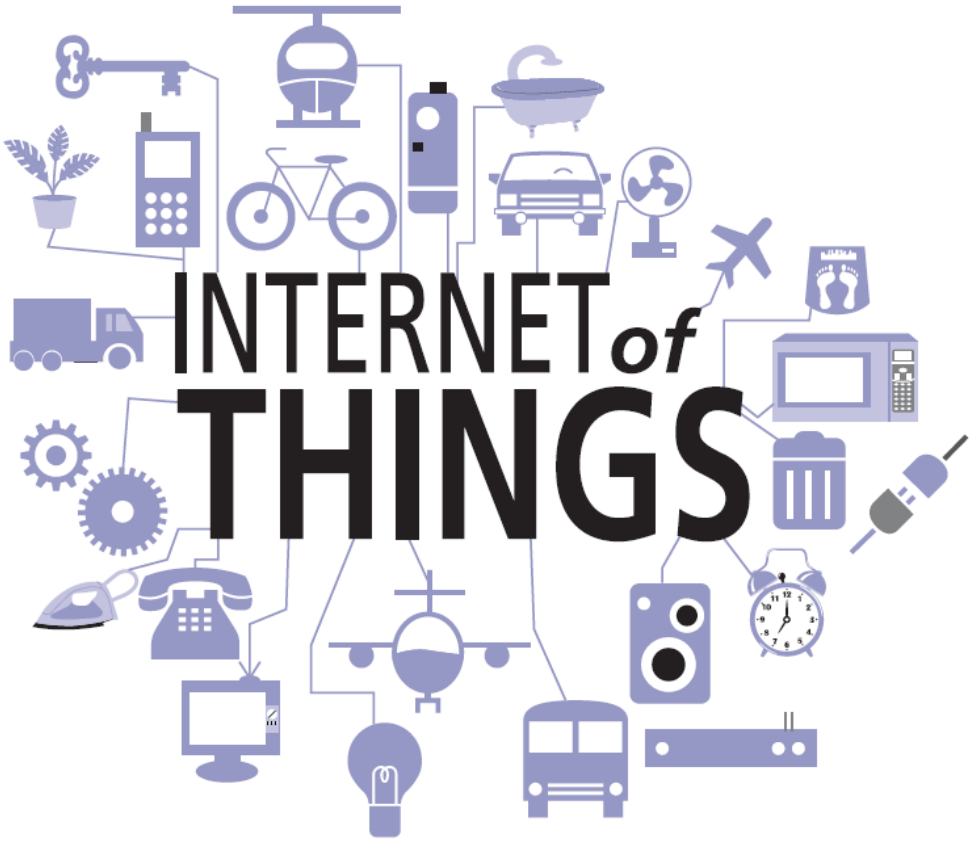
- Many believe that we're living in a post-PC era
- In the developing world mobile devices often leapfrog traditional PCs
- Implications:
  - Increased collaboration
  - The ability to manage business in real time
  - New ways to reach customers

Five IT Megatrends in the Information Age: Social Media

- Over 1.28 billion (and growing) Facebook users share status updates or pictures with friends and family
- Organizations use social media to encourage employee

Five IT Megatrends in the Information Age: The Internet of Things

- Devices have embedded computers and sensors, enabling connectivity over the Internet
- By 2008, more devices were connected to the Internet than people living on earth
- The Internet of *everything*?

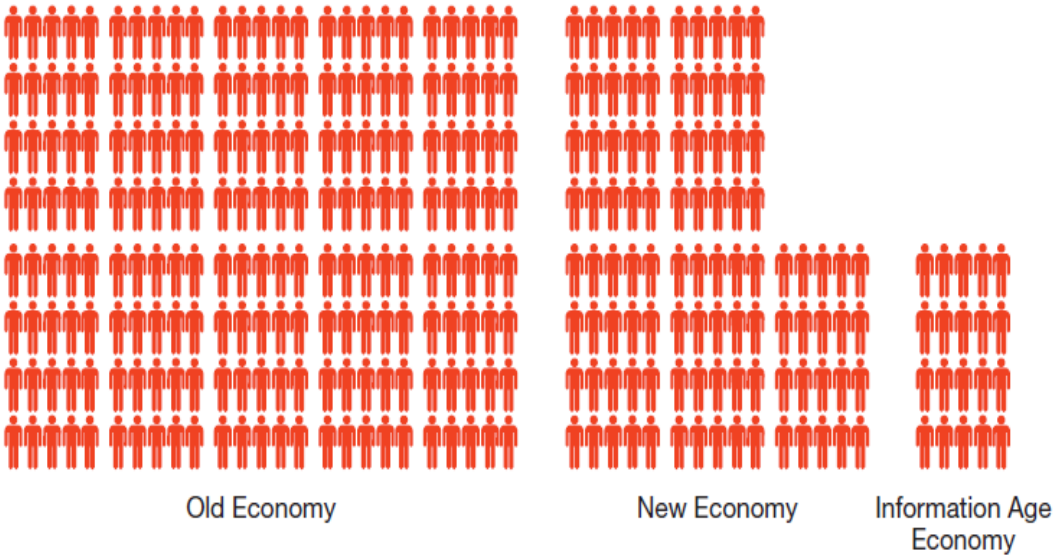


Five IT Megatrends in the Information Age: Cloud Computing

- Web technologies enable using the Internet as the platform for applications and data
- Many regard cloud computing as the beginning of the “fourth wave”
- Applications that used to be installed on individual computers are increasingly kept in the cloud
  - e.g., Gmail, Google Docs, Google Calendar

Five IT Megatrends in the Information Age:
Big Data

- IDC estimated that in 2011, 1.8 zettabytes of data were generated and consumed
- How much is 1.8 zettabytes? It is 1.8 trillion gigabytes, or the equivalent of 57 billion 32GB iPads (IDC, 2011)
- This number is forecast to grow by



Companies in the Information Age economy are creating value not from people, but from data.

Evolution of Globalization

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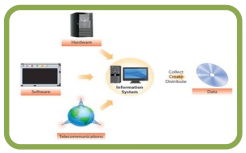
Evolution of Globalization

- Learning Objective: Be able to define globalization, describe how it evolved over time, and describe key globalization drivers.



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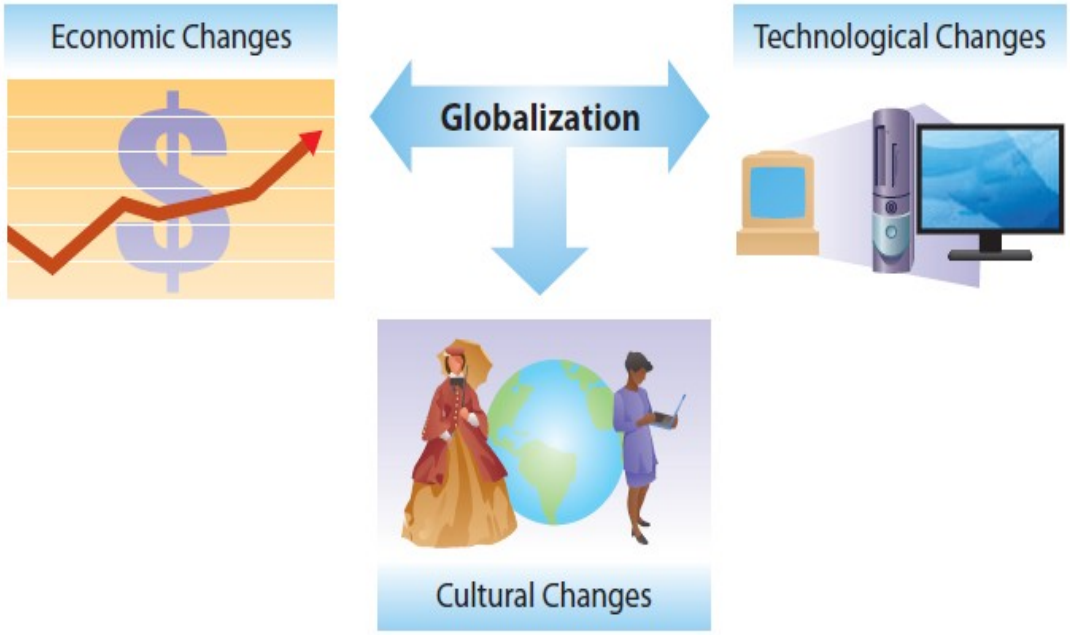
Key Driving Impacts of Globalization

- Economic change
  - International trade, global finance, labor outsourcing
- Cultural change
  - Multiculturalism from media, international travel, ethnic foods
- Technological change
  - Computing and communication platforms, global patent and copyright laws



The Rise of Information Systems Outsourcing

- Outsourcing: moving of business processes or tasks to another

Companies are offshoring production to overseas countries (such as China) to utilize talented workers or reduce costs.
Source: Lianxun Zhang/fotolia.

The Rise of Information Systems Outsourcing: Key Reasons for Outsourcing

- To reduce or control costs
- To free up internal resources
- To gain access to world-class capabilities
- To increase the revenue potential of the organization
- To reduce time to market
- To increase process efficiencies
- To be able to focus on core activities
- To source specific capabilities or skills

Opportunities of Operating in the Digital World

- Falling Transportation Costs
  - Shipping a bottle of wine from Australia to Europe costs only a few cents
- Falling Telecommunication Costs
  - These have helped create shared perspectives of behavior, desirable goods, and even forms of government
- Reaching Global Markets
- Accessing a Global Labor Pool
  - Highly skilled or low-cost labor pools exist in many countries that are now economically accessible

Challenges of Operating in the Digital World

- Government
  - Political instability
  - Regulatory: taxes/tariffs, import/export restrictions
- Geo-economic
  - Time zones, infrastructure
  - Workforce: welfare, demographics, expertise
- Cultural
  - Working with, providing services to

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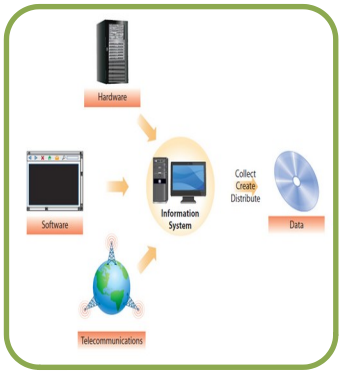

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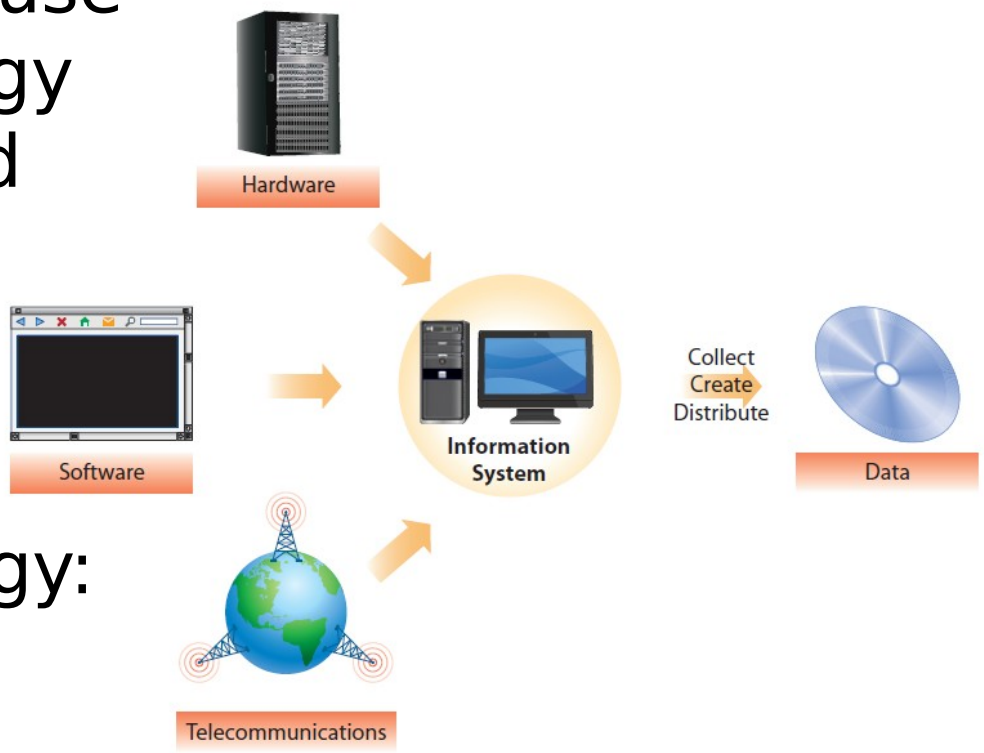
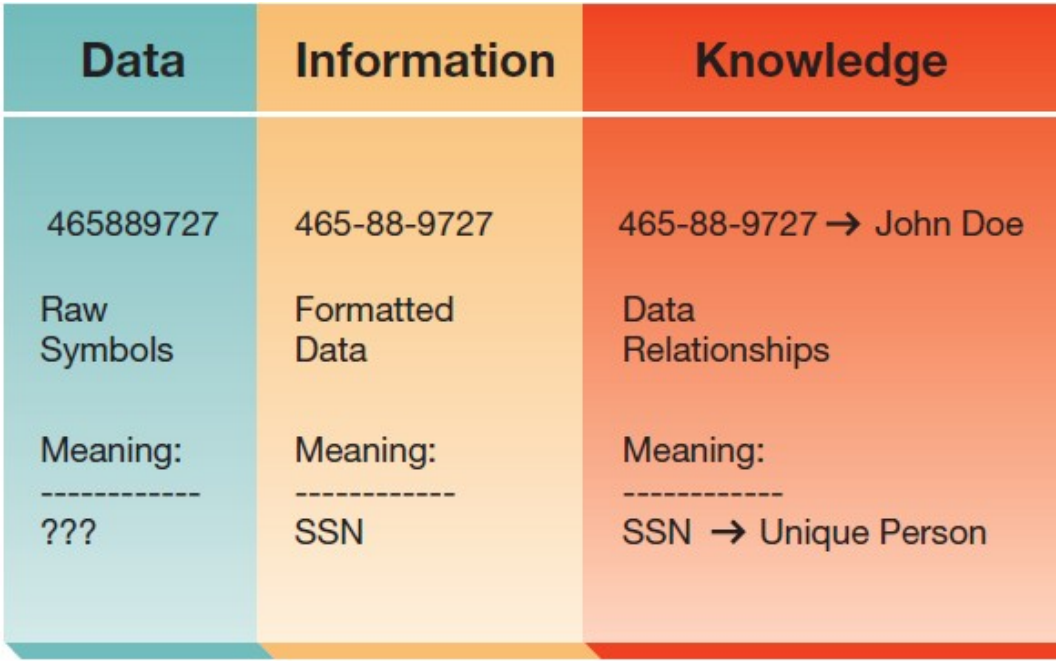
Information Systems

- Information systems use information technology to collect, create, and distribute useful data



- Information technology:
  - Hardware, software, telecommunications

Data: The Root and Purpose of Information Systems



- Alone, raw data are not very useful
- When processed into information, data become useful
- When information is understood and used for decisions, it becomes knowledge

People: The Builders, Managers, and Users of Information Systems

- As the use of information systems grows, so does the need for dedicated IS professionals.

Rank	Career	Job Growth (10-year forecast)	Median Pay (in US$)
1	Biomedical engineer	62%	87,000
2	Clinical nurse specialist	26%	86,500
3	Software architect	28%	121,000
4	General surgeon	24%	288,000
5	Management consultant	29%	110,000
6	Petroleum geologist	21%	183,000
7	Software developer	28%	88,700
8	IT configuration manager	29%	95,800
9	Clinical research associate	36%	95,100
10	Reservoir engineer	17%	179,000

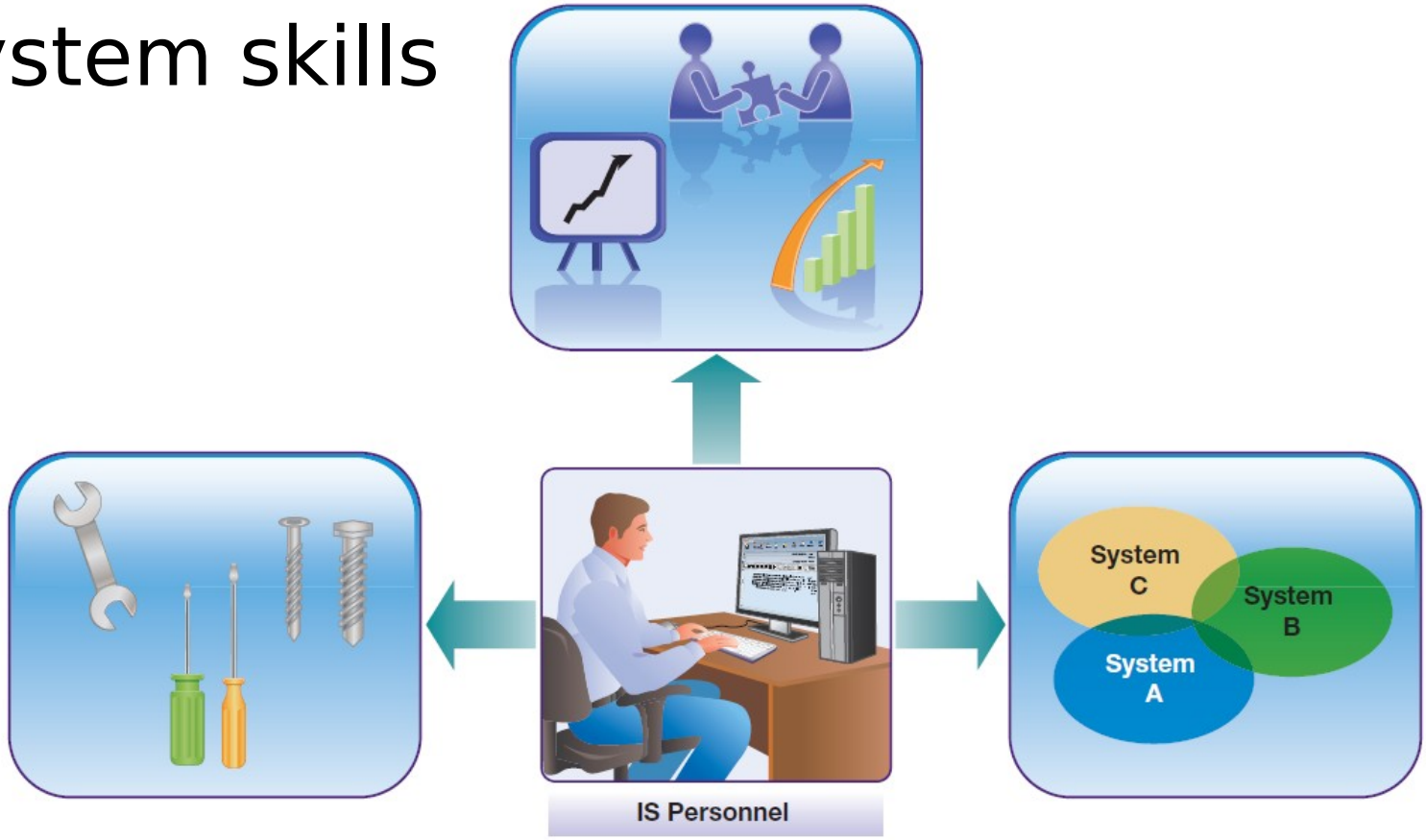
Source: Based on http://money.cnn.com/pf/best-jobs.

Careers in Information Systems

- Develop
  - Systems analyst, software developer, systems consultant
- Maintain
  - IS auditor, database administrator, Webmaster
- Manage
  - IS manager, IS security manager, chief information officer (CIO)
- Study
  - University professor, government scientist

What Makes IS Personnel So Valuable?

- A blend of technical, business, and system skills



Organizations: The Context of Information Systems

- Information systems can help organizations
  - Be more productive and profitable
  - Gain competitive advantage
  - Reach more customers
  - Improve service to their customers
- This holds true for all types of organizations—professional, social, religious, educational, and governmental

Types of Information Systems

- Transaction processing system (TPS)
- Management information system (MIS)
- Decision support system (DSS)
- Intelligent system
- Business intelligence system
- Office automation system
- Collaboration system
- Knowledge management system
- Social software
- Geographic information system (GIS)
- Functional area information system
- Customer relation management (CRM) system
- Enterprise resource planning system (ERP)
- Supply chain management system
- Electronic commerce system

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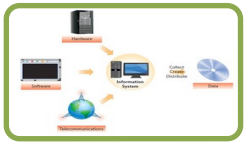

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Computer Ethics

"Describes the moral issues and standards of conduct as they pertain to the use of information systems"

- Collecting and analyzing user data may have negative impacts
  - Social decay
  - Increased consumerism
  - Loss of privacy

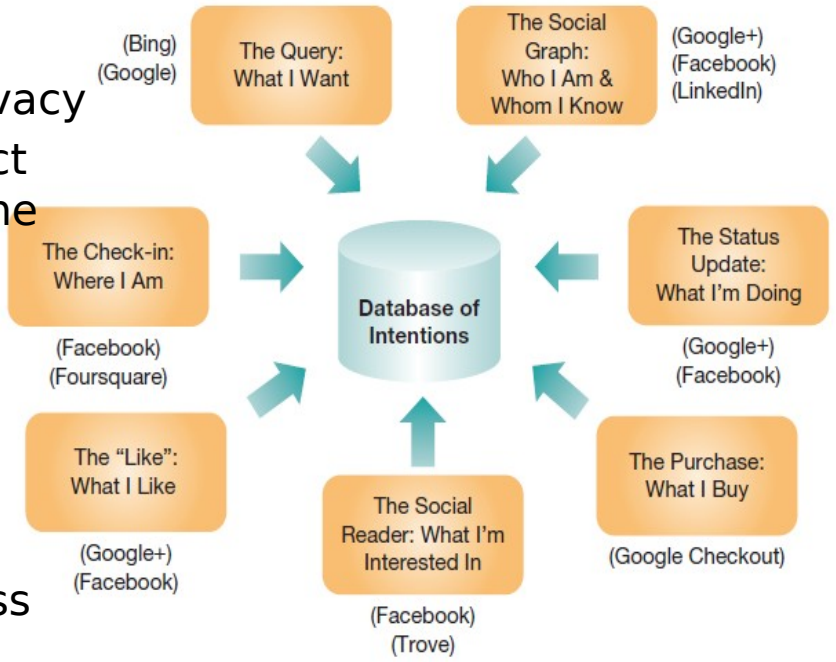
Richard O. Mason: "PAPA" Ethical Concerns— Privacy, Accuracy, Property, and Accessibility

- Privacy: What information should you have to reveal online or in the workplace?
- Accuracy: Are the data regarding individuals accurate? Can individuals access their data and verify the accuracy thereof? What are the impacts of inaccuracies?
- Property: Company owns the data/databases kept on individuals, and can sell the information as long as it doesn't violate stated privacy policies when gathering the data
- Accessibility: This circles back to the digital divide—who has access to information, and the skills to leverage it?

Privacy

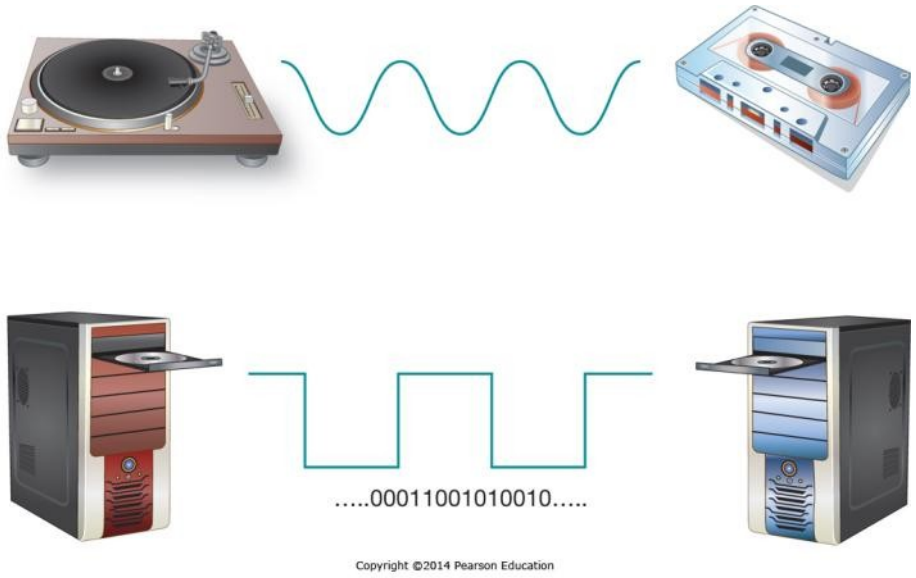
- Privacy on the Web
  - Who owns the computerized information about people? Answer: the company that maintains the database of customers is free to sell it…within limits
- E-mail Privacy
  - Legally, there is no right to e-mail privacy
  - Electronic Communications Privacy Act (ECPA), passed in 1986, protects phone conversations,
    but not e-mail
- Protecting your privacy
  - U.S FTC Fair Information Practice Principles: notice/awareness, choice/consent, access/participation, integrity/security, enforcement/redress

The database of intentions.
Source: Based on Batelle (2010).



Intellectual Property

- Copying digital music is almost effortless
- In many non-Western societies, using someone else's work is considered praise for the creator
- Using another's work without purchase or attribution has significant legal and ethical ramifications



The Need for a Code of Ethical Conduct: Computer Ethics Institute Guidelines

- The guidelines prohibit:
  - Using a computer to harm others
  - Interfering with other people's computer work
  - Snooping in other people's files
  - Using a computer to steal
  - Using a computer to bear false witness
  - Copying or using proprietary software without paying for it
  - Using the resources of others without authorization or compensation
  - Appropriating other people's intellectual output
- The guidelines recommend:
  - Review the social consequences of programs and systems you design
  - Use computers in ways that show consideration and

The Digital Divide

- Many people are being left behind in the Information Age
  - Strong linkage between computer literacy and a person's ability to compete in the Information Age
  - People in rural communities, the elderly, people with disabilities, and minorities lag behind national averages for Internet access and computer literacy
  - The challenges in overcoming the digital divide are even greater in developing countries

END OF CHAPTER CONTENT